

### REMARKS

This paper is responsive to the Office Action dated August 19, 2009. Claims 3, 4, 10, and 15 are pending. Claims 1-14 stand rejected. Claims 3, 4, and 10 have been amended. Claims 1-2, 5-9, and 11-14 have been cancelled. New claim 15 has been added. No new matter has been added to the application.

#### **Section 103(a) rejections:**

In the Office Action, claims 1-14 stand rejected pursuant to 35 USC 103(a) as being unpatentable over Bartlett (EP 0 308 583) (Applicant's admission prior art) in view of Miao et al. (U.S. Pat. No. 6,316,992) (Applicant's admission prior art). (See Office Action, p. 2.) Claims 3, 4, and 10 have been amended and Claims 2, 5-9, and 11-14 have been cancelled. Claims 3, 4, and 10 now depend from new Claim 15, and thus, Bartlett no longer applies. Furthermore, Applicant believes that new Claim 15 is allowable, and thus, the rejections of amended Claims 3, 4, and 10 should be withdrawn.

Moreover, Miao fails to teach or suggest the limitations of amended Claim 3, because Miao fails to teach or suggest an "inverting" input-electrode of the Opamp having a magnified drift voltage error that is measured and where "non-inverting" input-electrode is set to ground voltage during a "first mode." Miao also fails to teach or suggest inverting the sign of the magnified drift voltage error and storing as an analog value in a "sample and hold" unit, which is distinguished from a digital value (which would cause truncation error).

Furthermore, with regard to amended Claim 4, Miao fails to teach or suggest a "second mode" having a "non-inverting" input-electrode removed from ground potential and the drift voltage error is applied on it with its sign inverted. This allows a real, floating "virtual earth" to be

created at the "inverting" input-electrode of the Opamp, which is required for an analog integrator. In Miao, the correction signal is applied directly on the "inverting" input-electrode of an Opamp, which eliminates the possibility of using the device in Miao as an "integrator" since the error voltage would be integrated.

Miao also fails to teach or suggest that analog magnification and demagnification is done over the same two simple resistances, which allows an integrator to achieve high accuracy and sensitivity on its "virtual earth," as well as the simplicity for mass production. The device in Miao is designed for audio-frequencies and as mentioned several times in the text, (column 2 lines 45-47 it is stated that "at least a portion of the amplifier's DC offset voltage" is compensated) the correction Miao does is "more-or-less" and would render unsatisfactory operability for an analog integrator.

Furthermore, none of the relied-upon references carry out a compensation including having an offset voltage generated on the inverting leg of an Opamp, magnified, stored and then demagnified and applied to the leg that is not in active use. In a follower circuit, for example, the non-inverting leg of the Opamp is active and for an integrator the inverting leg. Applying the offset compensation on the inactive leg makes a difference, otherwise it would not be possible to produce a follower with five-digit "zero input – zero output" accuracy (since the difference would be continuously integrated) and an analog integrator with a five-digit accurate "zero virtual earth" that has a drift of only  $\pm 1\%$  from a 10 volt initial value in one hour, without resetting.

In Miao, the offset voltage is magnified only as much as it can be sensed and stored in a 10-digit memory (it can hold only three decimals) and then injected into the active input of the Opamp. Not forgetting the truncated part of the offset compensation, as it describes, the

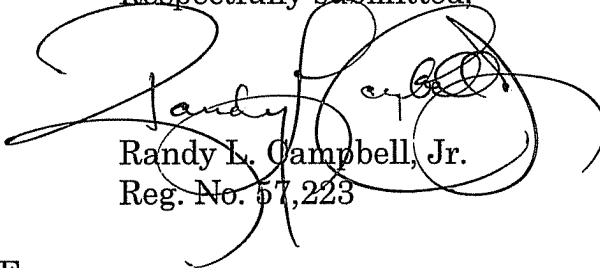
compensation is more or less accomplished. If the device of Miao would be used for analog integrator, the truncated drift error would saturate the integrator in a very short time. Data obtained from such a device would be meaningless.

For at least these reasons, the relied-upon references fail to teach or suggest all of the limitations of amended Claims 3, 4, and 10. As a result, Applicant respectfully requests that the rejections of amended Claims 3, 4, and 10 be withdrawn.

**Conclusion:**

Based upon the foregoing, Applicant respectfully submits the pending claims are allowable, and reconsideration of the rejections is respectfully requested. If the Examiner believes that prosecution of his application may be advanced by way of a telephone conference, the Examiner is respectfully invited to telephone the undersigned attorney.

Respectfully submitted,



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